

IN THE CLAIMS:

1. (Currently Amended) A method of automatically tuning a loop-filter of a phase locked loop, which loop-filter includes a capacitance at an output of a charge pump of said phase locked loop, and which method comprises the steps of said charge pump providing current impulses to said loop-filter, and adjusting the amplitude of said current impulses output by said charge pump independently of said phase locked loop and essentially proportionally to said capacitance at said output of said charge pump.
2. (Original) A method according to claim 1, wherein the amplitude of said current impulses output by said charge pump is adjusted by providing a bias current to said charge pump, which bias current is adjusted essentially proportionally to said capacitance at said output of said charge pump.
3. (Currently Amended) A method of automatically tuning a loop-filter of a phase locked loop, which loop-filter includes a capacitance at an output of a charge pump of said phase locked loop, and which method comprises the steps of said charge pump providing current impulses to said loop-filter, and adjusting the amplitude of said current impulses output by said charge pump essentially proportionally to said capacitance at said output of said charge pump, wherein the amplitude of said current impulses output by said charge pump is adjusted by providing a bias current to said charge pump, which bias current is adjusted essentially proportionally to said capacitance at said output of said charge pump. ~~A method according to claim 2,~~ and wherein said bias current is adjusted by a switched capacitor current generator alternating a charging direction of a capacitor and converting a voltage across said capacitor into said bias current, said capacitor being integrated on a single integrated circuit chip with said loop-filter and said capacitor having a capacitance which corresponds essentially to said capacitance at said output of said charge pump.

4. (Currently Amended) A phase locked loop comprising:
 - a loop-filter;
 - a charge pump for providing current impulses to said loop-filter, which loop-filter includes a capacitance at an output of said charge pump; and
 - a tuning component for adjusting the amplitude of current impulses output by said charge pump independently of said phase locked loop and essentially proportionally to said capacitance at said output of said charge pump.
5. (Original) A phase locked loop according to claim 4, wherein said tuning component is a current generator generating a current which is adjusted essentially proportionally to said capacitance at said output of said charge pump and providing said generated current as a bias current to said charge pump.
6. (Currently Amended) A phase locked loop comprising:
 - a loop-filter;
 - a charge pump for providing current impulses to said loop-filter, which loop-filter includes a capacitance at an output of said charge pump; and
 - a tuning component for adjusting the amplitude of current impulses output by said charge pump and essentially proportionally to said capacitance at said output of said charge pump, wherein said tuning component is a current generator generating a current which is adjusted essentially proportionally to said capacitance at said output of said charge pump and providing said generated current as a bias current to said charge pump. ~~A phase locked loop according to claim 5,~~ wherein said current generator is a switched capacitor current generator including:
 - a capacitor, which capacitor is integrated on a single integrated circuit chip with said loop-filter and which capacitor has a capacitance which corresponds essentially to said capacitance at said output of said charge pump;
 - switching elements for alternating a charging direction of said capacitor;
 - and

a converting element for converting a voltage across said capacitor into said bias current.

7. (Currently Amended) A unit comprising a phase locked loop with
 - a loop-filter;
 - a charge pump for providing current impulses to said loop-filter, which loop-filter includes a capacitance at an output of said charge pump; and
 - a tuning component for adjusting the amplitude of current impulses output by said charge pump independently of said phase locked loop and essentially proportionally to said capacitance at said output of said charge pump.